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West Nile Virus: State and National Update

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Since its appearance in the United States in 1999, West Nile virus (WNV) has spread rapidly across North America. The virus is carried by mosquitoes and can affect humans, birds, and horses. During 2002 and 2003, reports of more than 14,000 human cases in 46 states made this the most significant mosquito-borne virus epidemic ever documented in the Western Hemisphere. So far, except for a crow, a raven, and two horses in late 2002, Washington State has not yet been affected with endemically acquired WNV infection, but that will undoubtedly change.

Infection in Humans

West Nile virus infection is often asymptomatic, but approximately 20% of those infected will have a self-limited flu-like illness, and less than 1% will have an illness severe enough to require hospitalization. Serious infections are most common among those 50 years of age or older, and may include meningitis, encephalitis, acute flaccid paralysis or other neurological manifestations (known as West Nile neuroinvasive disease). Five to 12% of serious infections are fatal. The peak season for human West Nile virus infections is August and September, after the virus has amplified in the bird and mosquito populations.

Stepped Up Surveillance

Surveillance for West Nile virus in Washington was stepped up in 2003. More than 900 dead birds were tested from 36 counties, and over 100 horses with neurologic illness were tested. The only evidence of West Nile infection was in eight Washington residents (12% of those tested) who had been exposed to infected mosquitoes during travel to heavily affected areas (Colorado, Oklahoma, Wyoming, Texas, and South Dakota).

Several cases of transfusion-associated WNV transmission were documented in the United States in 2002. In response, a nationwide blood-screening program was initiated during 2003. All donors are interviewed for symptoms of illness at the time of donation, and donated blood products are tested with a nucleic acid amplification test. This screening process detected virus in the blood of approximately 1000 donors (primarily in states with intense WNV activity) in 2003. Screening and the destruction of WNV-contaminated blood products significantly reduced the risk of transfusion-associated WNV infection.

Nationwide Cases in 2003 and 2004

During 2003, the Centers for Disease Control and Prevention (CDC) received reports of 9862 persons with WNV infection, 2866 with serious neuroinvasive disease, including 264 fatalities. Additionally, last year Canada reported more than 1400 human infections.

In 2004, West Nile virus activity started earlier in the season than in previous years. More than 30 states had reported some activity as of July 13, with infections in humans concentrated in Arizona and high numbers of dead bird reports in Southern California (Figure 1, page 2).

Mosquito Vectors

Climate and habitat differences throughout the state support a variety of mosquito species. Competent vectors of West Nile virus, including *Culex tarsalis* and *Culex pipiens* (an important vector in urban areas elsewhere in the United States) are present in every county in Washington. In the past, outbreaks of mosquito-borne disease have occurred in irrigated areas of Washington such as the Yakima valley, where *Culex tarsalis* is abundant.

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State Surveillance and Educational Activities

The Washington State Department of Health initiated a West Nile Virus Surveillance and Response Program in 2000 with a grant provided by the CDC. The program is a cooperative effort of numerous partners including federal, state and local health agencies, healthcare providers, laboratories, wildlife agencies, mosquito control districts, and veterinarians.

For More Information:

http://www.doh.wa.gov/WNV

State and local health jurisdictions are coordinating surveillance and educational activities including:

1. Investigating reports from healthcare providers of suspected mosquito-borne disease in humans; providing laboratory testing for suspected cases who are seriously ill and hospitalized.
2. Monitoring mosquito populations and testing some collected mosquitoes for the presence of WN and St. Louis encephalitis viruses.
3. Monitoring reports of dead birds and facilitating testing of a sample of those birds for WNV.
4. Working with veterinarians and the Washington State Department of Agriculture to identify and facilitate testing of horses exhibiting neurologic disease compatible with WNV infection.
5. Distributing protocols, testing criteria, clinical guidelines and information on reporting to healthcare providers
6. Distributing health education materials to state and local agencies and the public.

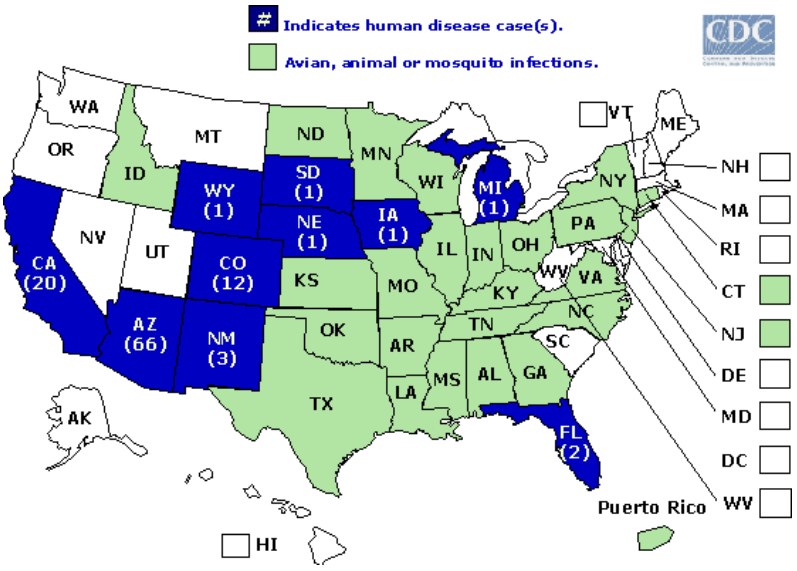

FIGURE 1: 2004 West Nile Virus Activity in the United States
(reported to CDC as of July 13, 2004)

Distribution of avian, animal, or mosquito infection with number of human cases, if any. If West Nile virus infection is reported in any area of a state, the entire state is shaded.

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Tips for Preventing West Nile Virus Infection

Avoid Mosquito Bites

- Use window screens to keep mosquitoes out of the house.
- If possible, limit time outdoors at dawn and dusk when mosquitoes are most active.
- Wear lightweight clothing outdoors to cover the arms and legs.
- Apply mosquito repellent and follow instructions for use.

Eliminate Mosquito Breeding Areas

- Around the home, remove outside standing water in cans, bottles, buckets, old tires, drums, and other containers.
- Change water at least twice a week in flower vases, birdbaths, planters, and animal watering pans.